Prioritizing Information Needs

for

Risk Assessment

and

Mitigation Strategies

General Comments

- Agreement that John Harwood and Jay Barlow provided an excellent basis upon which to develop our topic
- Overall Goal
  - maximize protection of the animals
  - maximize benefits for users

Risk Information Needs

- Distinguish between risk to
  - Individuals
  - Populations
- Distinguish between responses that are
  - Acute
  - Chronic
- Caused by sources which are
  - Localized and high intensity
  - Dispersed and low intensity

Risk Information Needs

- Three Dimensional Matrix
  - Category of hazard
  - Probability of occurrence
  - Severity of response
  - Impact on Individual and Population

Risk Information Needs

Hazard Category A….Z

Probability / Severity	High	Medium	Low
High	I		
Medium			
Low		P	

I = Impact on Individual; P = Impact on Population

Risk Information Needs

- Effects are
  - Auditory
  - Non-auditory
  - Indirect (behavioral)
- Need to be able to detect when an effect has occurred

Risk Information Needs

- Effects on individuals need to be related to size of population
  - Negligible Impact
  - Small Numbers

Risk Information Needs

- Data Integration
- Hearing
- Injury (PTS)
- Cumulative Impact
- Population Impact

Risk Information Needs

- Three dimensional, broadband source characterization
- Propagation models, particularly in shallow water
- Identification of most important sound sources in terms of marine mammal risks

Generating More Data

- Shared captive animal facility
- More access to ship time for behavioral observations
- More access to operational ships for controlled experiments
- Quick response stranding teams
- Greater capacity building in other countries

Risk Prioritization

- Information that improves understanding of mechanisms
- Information that allows for extrapolation
- Reduces risk to animals of concern
- Increases the ability of the noise producers to continue in precautionary mode

Risk Prioritization

- Helps determine cause and effect
- Helps determine if there is a real problem
- Has clear, achievable objectives
- Builds capacity to complete the Risk Matrix

Mitigation Information Needs

- Decision Analysis Models
- Efficiency and Efficacy of Mitigation Measures
- Behavioral responses to current mitigation measures
- Cost:Benefit analysis of mitigation needs

Mitigation Information Needs

- Data Integration
- Better understanding of distribution, abundance, habitat, temporal use
- Better modeling of habitat
- Active detection
  - Equipment
  - Classification algorithms
- Receiver Operating Characteristics for all monitoring techniques

Mitigation Prioritization

- Immediacy – information that helps us understand efficacy of current practices
- Information to match mitigation strategy to local/specific situation
- Uses state of the art techniques
- Optimization of Cost:Benefit
  - Current approaches
  - Monitoring to understanding

Mitigation Prioritization

- Addresses current regulations, laws, and requirements
- Acceptability to public and regulators
- Contributes to practical, feasibility, auditable mitigations strategies